Homeland Security

U.S. COAST GUARD
MSO St. Louis

Marine Safety Information Bulletin #04-06

This bulletin is used purely for informational purposes to assist the maritime community within the Marine Safety Office St. Louis Area of Responsibility. Its purpose is to advise relevant parties of emerging information & situations that may impact our Marine Transportation System as well as facilitates cooperation among the involved parties regarding actions that we may be taking and/or that you may need to employ in the interest of safety/security.

ELECTRONICALLY CONTROLLED PUMP ENGINES ON BOARD TANK BARGES

March 1, 2006

1. Introduction: On 25 November 2005, USCG District Eight Marine Safety Division has issued D8 (m) Policy Letter 02-2005 to address electronically controlled pump engines on board tank barges.

2. Requirement: 46 Code of Federal Regulations 111.105.31(l) describes Class I, Division 1 location s for a tank barge that carries a flammable or combustible cargo with a flashpoint below 60 degrees C (140 degrees F), as **any** electrical equipment located within 10 feet (3 meters) of a **cargo tank vent outlet, cargo tank ullage opening, cargo pipe flange, or cargo valve**.

3. Concern: The old mechanical start diesel prime mover engines used for the cargo pump on older tank barges did not use electrical equipment for their operation; therefore, reference (a) was not a concern for most barges. However, the introduction of electronically controlled prime mover engines for the cargo pumps for tank barges over the last 10 years has lead to electrical ignition sources and engine monitoring and control systems being located in Class I, Division 1 areas.

4. OCMI Guidance: D8 (m) Policy Letter 02-2005 was drafted to provide local Officer in Charge of Marine Inspections (OCMI) with background and compliance guidance timelines. In addition, OCMI's are to provide widest dissemination of the policy to owners and operators of all tank barges operating in the Eighth District. Industry representatives are encouraged to review the attached policy and become thoroughly familiar with this issue.

5. Any questions regarding this information bulletin may be addressed to the Prevention Section, MSO St. Louis at (314) 539-3091 ext. 3501.

U.S. Department of Homeland Security

United States Coast Guard

Commander
Eighth Coast Guard District
Hale Boggs Federal Bldg.

500 Poydras Street
New Orleans, LA 70130-3310
Staff Symbol: (moc)
Phone: (504) 589-2455
Fax: (504) 589-4999

16711/Pump Engines
D8(m) Policy Ltr 02-2005
22 November 2005

MEMORANDUM

From: R. W. BRANCH
CCGD8 (m)

To: Distribution

Subj: ELECTRONICALLY CONTROLLED CARGO PUMP ENGINES ON BOARD TANK BARGES

Ref: (a) 46 CFR 111.105-31(l)

1. **PURPOSE:** This Policy Letter promulgates regulatory enforcement guidance for electronically controlled cargo pump engines installed on tank barges.

2. **DIRECTIVES AFFECTED:** None.

3. **DISCUSSION:**

a. Reference (a) describes Class I, Division 1 locations for a tank barge that carries a flammable or combustible cargo with a flashpoint below 60 degrees C (140 degrees F), as any electrical equipment located within 10 feet (3 meters) of a cargo tank vent outlet, cargo tank ullage opening, cargo pipe flange, or cargo valve.

b. The old mechanical start diesel prime mover engines used for the cargo pump on older tank barges did not use electrical equipment for their operation; therefore, reference (a) was not a concern for most barges. However, the introduction of electronically controlled prime mover engines for the cargo pumps for tank barges over the last 10 years has lead to electrical ignition sources and engine monitoring and control systems being located in Class I, Division 1 areas.

c. The following guidance applies specifically to cargo pump engines manufactured by John Deere; however, electronically controlled cargo pump engines manufactured by other companies must also meet the requirements of reference (a) for Class I, Division 1 areas. If an OCMI suspects other manufacturers of not meeting these requirements, the OCMI should require the manufacturer to provide the appropriate approval documentation.

d. On the electronically controlled prime movers manufactured by John Deere, the noted electrical ignition sources include the control panel, notification light, alternator, batteries, and the ECM computer, including all the associated wiring on the engine for the sensors. To make these prime mover engines safe for operation in a Class I, Division 1 area, the manufacturer has developed several components that can be retrofitted on these engines to bring them into compliance with reference (a). These components include a new control panel, notification light, and the correct gland fittings for all components approved for use in

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Class I, Division 1 locations. Enclosed are several pictures which show examples of the correct components. The modified control panel is noted in enclosure (1). The proper gland fittings with battery vent are showed in enclosure (2). A close-up of the gland fitting is in enclosure (3).

e. In addition, John Deere is in the process of designing a wire harness for the sensors that meet reference (a). They are also in the process of obtaining proper certification of the "Pyroban" alternator at a Coast Guard accepted independent laboratory.

f. Recognizing the potential negative national impact of requiring hundreds of gas, oil and chemical tank barges to be removed from service for immediate retrofit of these components, the following enforcement guidance will be used:

(1) Existing tank barges (ones with existing COIs): OCMIs should issue a CG-835 requiring the barges to make the modifications indicated in paragraph 3.d. no later than May 30, 2006. A separate CG-835 should be issued regarding the wire harness and alternator. Since these components are still being designed or tested, a CG-835 requiring that the alternator and the wire harness to the sensors be replaced to meet Class I, Division 1 areas should be issued with a compliance date of no later than August 30, 2006. OCMIs may extend these compliance dates if they feel that the barge companies are making good progress on the retrofits. There should be no cargo restrictions during this period. OCMIs need not make additional visits to tank barges specifically to search for these deficiencies but will check for them during any regularly scheduled tank barge inspection or during an investigation of a marine casualty.

(2) New tank barges: Initial COIs should not be issued until the barges make the modifications indicated in paragraph 3.d. A CG-835 should be issued regarding the wire harness and alternator. Since these components are still being designed or tested, a CG-835 requiring that the alternator and the wire harness to the sensors be replaced to meet Class I, Division 1 areas should be issued with a compliance date of no later than August 30, 2006. OCMIs may extend this compliance date if they feel that the barge companies are making good progress on the retrofits. There should be no cargo restrictions as long as the modifications in paragraph 3.d. are made.

4. **ACTION:**

a. Eighth District OCMIs shall implement this guidance and disseminate the contents of this Policy Letter to owners and operators of all tank barges operating in the Eighth District.

b. OCMIs should ensure that all tank barges equipped with John Deere electronically controlled engines are issued CG-835s as per paragraphs 3.f.1. or 3.f.2.

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5. **FEEDBACK:** Questions on this policy should be referred to the Eighth Coast Guard District, D8(moc), at 504-589-2455.

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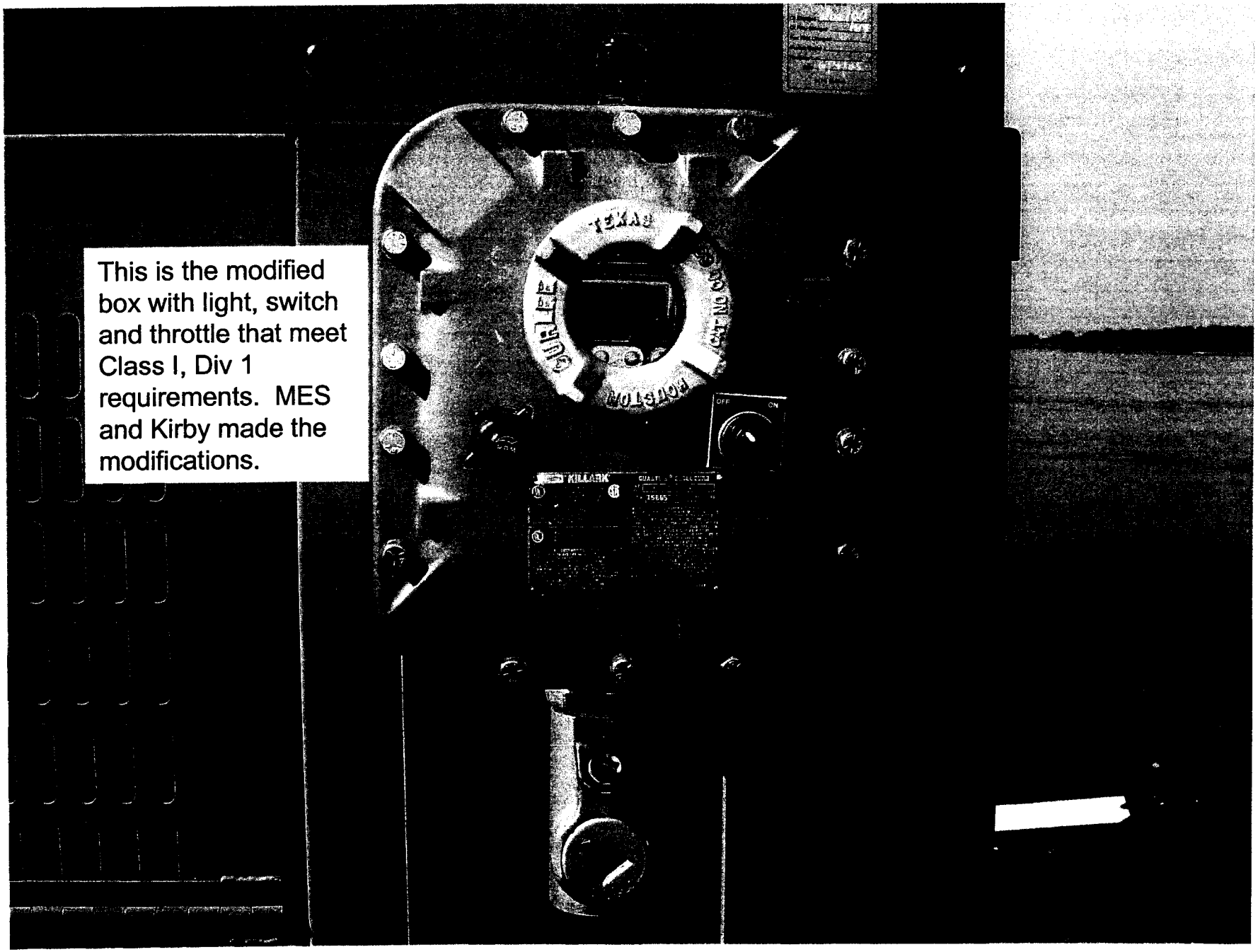
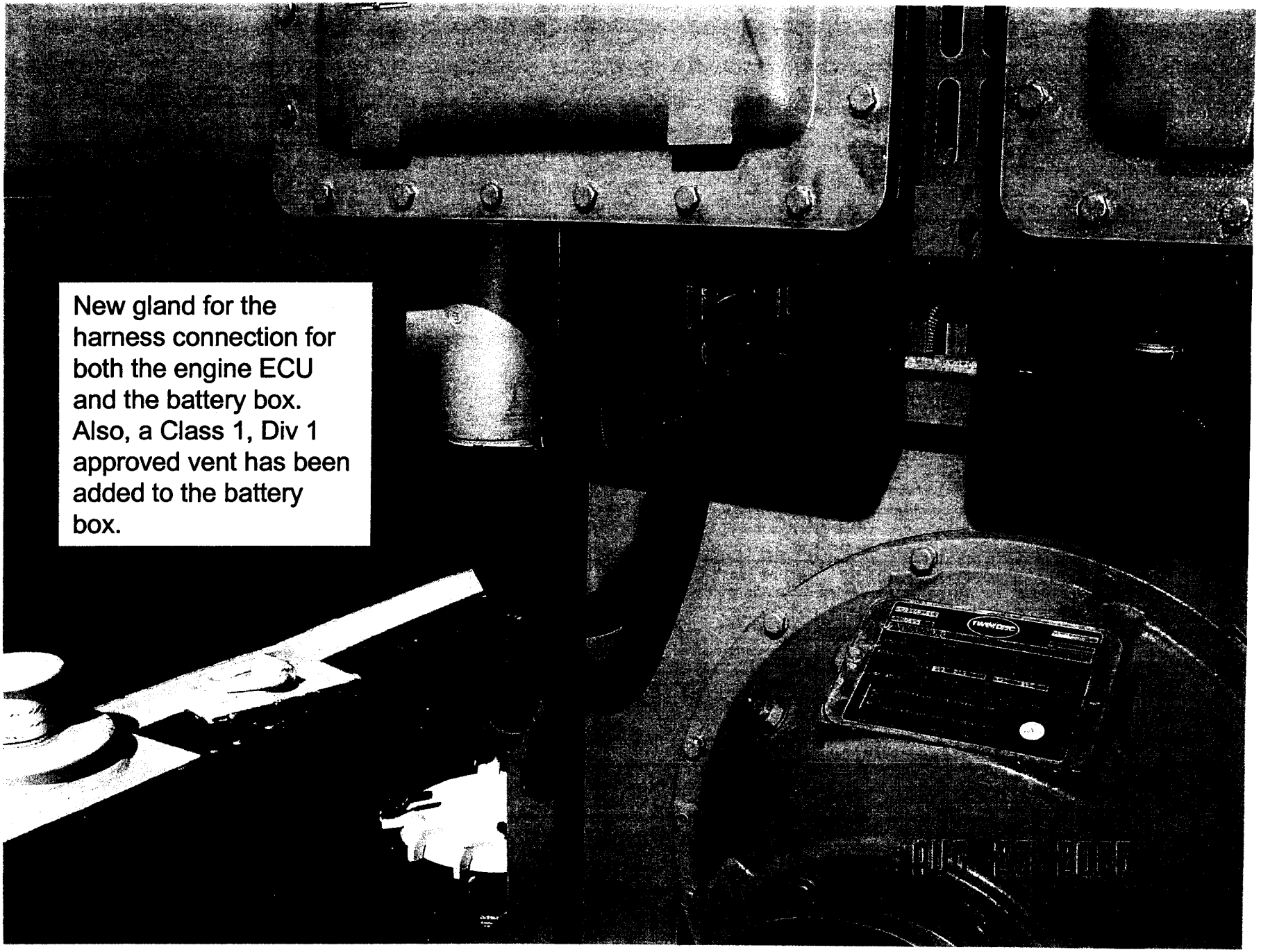
Encl: (1) Picture of modified control panel
(2) Picture of proper gland fitting
(3) Close-up picture of proper gland fitting

Dist: All Eighth District Sectors, MSOs & MSUs

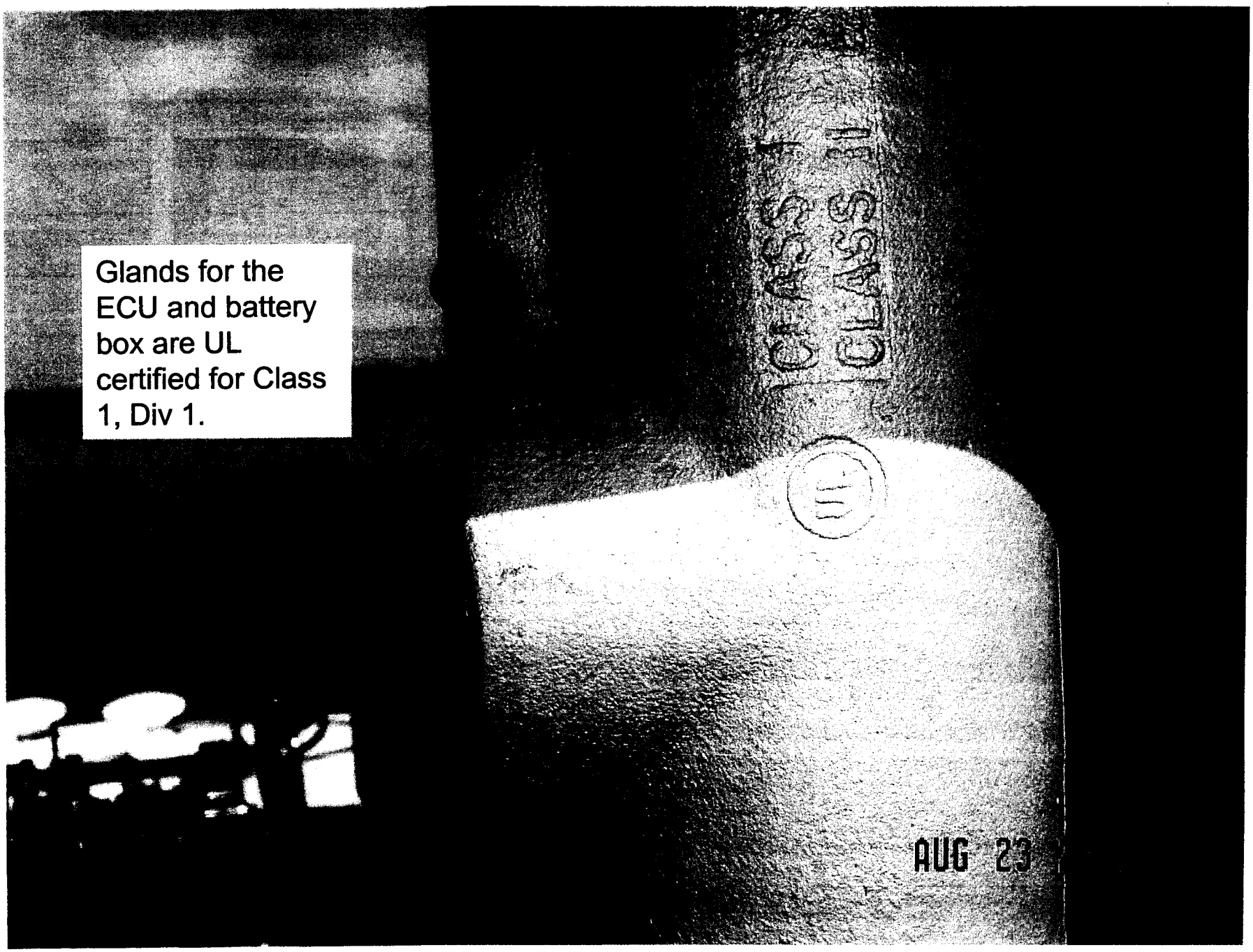
Copy: G-MOC
G-MSE
MSC


This is the modified box with light, switch and throttle that meet Class I, Div 1 requirements. MES and Kirby made the modifications.
KILLARK
OFF
ON

Enclosure (1)


New gland for the harness connection for both the engine ECU and the battery box. Also, a Class 1, Div 1 approved vent has been added to the battery box.

Enclosure (2)


Glands for the ECU and battery box are UL certified for Class 1, Div 1.
AUG 23

Enclosure (3)